

# Impact Resistant Composite Structures for Space Suit Applications, Phase I

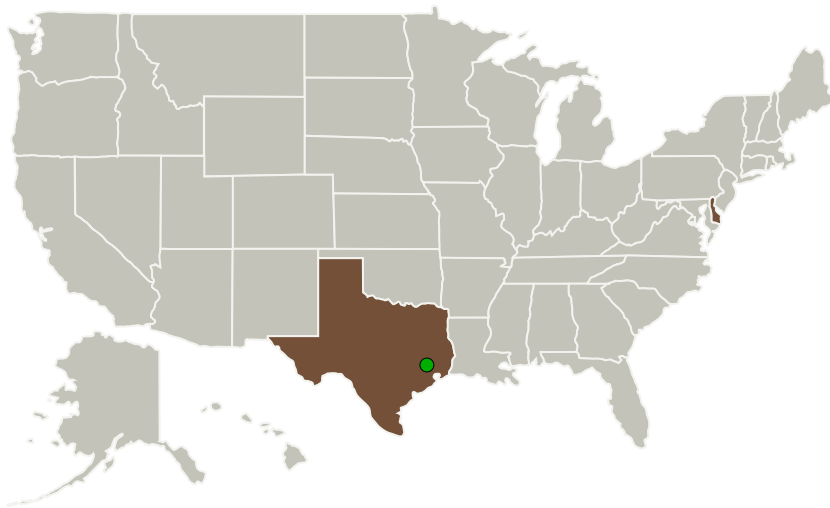
Completed Technology Project (2017 - 2017)



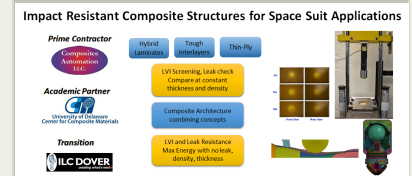
## Project Introduction

Composites Automation (CA) and partners University of Delaware Center for Composite Materials (UD-CCM) and ILC Dover, propose to evaluate innovative composite material and structure concepts that improve impact performance for space suite hard composite components. A systematic experimental screening methodology in Phase I, followed by detailed design and assessment in Phase II. Material innovations evaluated in this effort include hybrid laminate constructions, interlayers and thin-ply composite laminates; as well as potential synergistic combinations. A Low-Velocity Impact (LVI) protocol will be used in combination with leak resistance checks to evaluate concepts and guide composite design. A two-stage methodology is proposed with initial screening of concepts under equivalent conditions for comparative assessment, followed by performance limit assessment (maximum impact energy with no leak).

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Composites Automation, LLC	Lead Organization	Industry	Newark, Delaware
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas



Impact Resistant Composite Structures for Space Suit Applications, Phase I Briefing Chart Image

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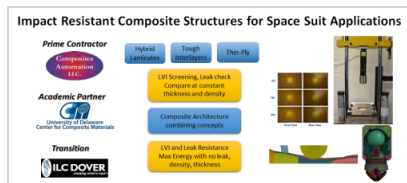


## Primary U.S. Work Locations

Delaware

Texas

## Images



### Briefing Chart Image

Impact Resistant Composite Structures for Space Suit Applications, Phase I Briefing Chart Image

(<https://techport.nasa.gov/image/130350>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Composites Automation, LLC

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

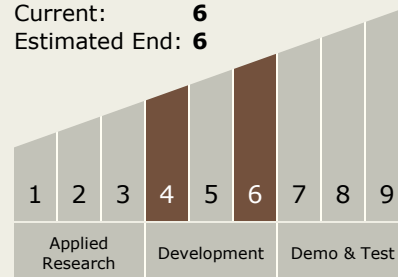
Carlos Torrez

### Principal Investigator:

Roger Crane

## Technology Maturity (TRL)

Start: 4  
Current: 6  
Estimated End: 6



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## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.2 Extravehicular Activity Systems
    - └ TX06.2.1 Pressure Garment